SANTA CRUZ BIOTECHNOLOGY, INC.

COX6b1 (77.1): sc-100524

BACKGROUND

The cytochrome c oxidase (COX) family of proteins function as the final electron donor in the respiratory chain to drive a proton gradient across the inner mitochondrial membrane, ultimately resulting in the production of water. The mammalian COX apoenzyme is a dimer, with each monomer consisting of 13 subunits, some of which are mitochondrial and some of which are nuclear. COX6b1 (cytochrome c oxidase subunit VIb polypeptide 1) is a nuclear encoded subunit. Localizing to the intermatrix side of the inner membrane of the mitochondrion, COX6b1 is responsible for joining the two COX monomers to form the COX dimer. COX6b1 is highly expressed in oocytes and zygotes and appears to be unnecessary for early embryonic development but essential for the blastocyst stage. The loss or silencing of the gene encoding COX6b1 results in mitochondrial dysfunction that ultimately leads to apoptosis of blastocyst-stage embryos.

REFERENCES

1. Taanman, J.W., et al. 1989. Nucleotide sequence of cDNA encoding subunit VIb of human cytochrome c oxidase. Nucleic Acids Res. 17: 1766.
2. Carrero-Valenzuela, R.D., et al. 1991. Human cytochrome c oxidase subunit VIb: characterization and mapping of a multigene family. Gene 102: 229-236.
3. Taanman, J.W., et al. 1991. Identification of three human pseudogenes for subunit VIb of cytochrome c oxidase: a molecular record of gene evolution. Gene 102: 237-244.
4. Grossman, L.I. and Lomax, M.I. 1997. Nuclear genes for cytochrome c oxidase. Biochim. Biophys. Acta 1352: 174-192.
5. Mootha, V.K., et al. 2003. Integrated analysis of protein composition, tissue diversity, and gene regulation in mouse mitochondria. Cell 115: 629-640.
6. Da Cruz, S., et al. 2003. Proteomic analysis of the mouse liver mitochondrial inner membrane. J. Biol. Chem. 278: 41566-41571.
7. Cui, X.S., et al. 2006. Gene expression of Cox5a, 5b, or 6b1 and their roles in pre-implantation mouse embryos. Biol. Reprod. 74: 601-610.

CHROMOSOMAL LOCATION

Genetic locus: COX6B1 (human) mapping to 19q13.12.

SOURCE

COX6b1 (77.1) is a mouse monoclonal antibody raised against recombinant COX6b1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

COX6b1 (77.1) is recommended for detection of COX6b1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for COX6b1 siRNA (h): sc-97782, COX6b1 shRNA Plasmid (h): sc-97782-SH and COX6b1 shRNA (h) Lentiviral Particles: sc-97782-V.

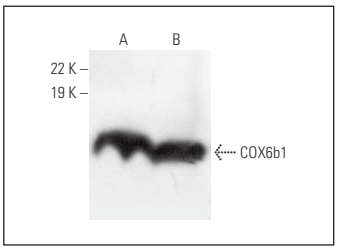
Molecular Weight of COX6b1: 10 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



COX6b1 (77.1): sc-100524. Western blot analysis of COX6b1 expression in HL-60 (**A**) and Hep G2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Byun, H.O., et al. 2012. GSK3 inactivation is involved in mitochondrial complex IV defect in transforming growth factor (TGF) β1-induced senescence. Exp. Cell Res. 318: 1808-1819.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.